

Air Resources Board Update

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TOPICS

- Major Developments-Past Year
 - Goods Movement
 - ARB Rule Making Underway
 - Up Coming Rule Development
 - Global Warming Solutions Act-AB32
- EMFAC and Off Road Model Release
- State Implementation Plan Development
 - Milestones
 - Draft Control Concepts
 - Next Steps

Why the Goods Movement Plan (GMP)

- Port growth
- Localized health risks
- Contribution to criteria air pollutants
 - PM2.5
 - Ozone

GMP Recently Adopted ARB Rules

- Low sulfur fuel for trucks, equipment, harbor craft, in-state locomotives
- Truck idling limits
- Marine auxiliary engine fuels
- Diesel Cargo handling equipment
- Ban on cruise ship incineration
- International border trucks
- Gas Forklifts

GMP Rule Making Underway

- Port trucks
- Privately-owned truck fleets
- Shore power for ships and harbor craft
- Harbor craft fleets & new engine standards
- Ban on ship incineration (beyond cruise ships)

GMP Additional Strategies Under Consideration

- Low sulfur fuel for ship main engines
- Expand ship reduction speed
- Switcher/yard locomotive upgrades
- “Green ship” construction and deployment to California service

Emission Reduction from Goods Movement Statewide

Percent reduction in goods movement emissions between 2005-2020, with growth (20% from rail yards):

Sulfur oxides ↓ 78%

Diesel PM ↓ 79%

Nitrogen oxides ↓ 63%

Hydrocarbons ↓ 58%

Good News

Ultra Low Sulfur Diesel Fuel

- CA completed switch to ULSD
Sept. 1, 2006 in preparation for use in
Intrastate locomotives, HD Truck, and
Harbor Crafts in January 1, 2007
- 2007 Federal Highway Rule (Heavy Duty
Diesel)

EMFAC 2007

- **Will be released in November 2007**
- Updates:
 - Fuel correction factors
 - I&M updates
 - Brakewear
 - Accrual updates
 - VMT matching by fuel type
 - New populations
 - Redistribution of HHD diesel populations
 - Updated base year and forecast year VMTs
 - Ethanol permeation
 - Updated HHD diesel exhaust rates, etc
 - Temperatures, relative humidity

Changes on Percentage Basis

Magnitude of Changes on a Percentage Basis		
<i>Statewide Changes for 2015 Calendar Year</i>	ROG	NOx
Fuel Correction Factor	-4.4	-7.4
Inspection & Maintenance	-3.9	0.0
Brakewear	0.0	7.1
Accrual Rates	0.0	-16.0
Vehicle Miles Traveled by Fuel Type	-2.2	1.0
New Populations	138.4	180.9
Redistribution of HHD Diesel vehicle population	0.0	-2.6
Updated base-year and forecast year VMTs (33 areas)	-37.6	-151.6
Ethanol Permeation	11.1	0.0
Updated HHD Diesel	13.8	52.5
Temperature and Humidity	31.9	0.0
Estimated Changes for Pending Vehicles	-47.2	-11.4
	> 30% increase	
	> 10% decrease	
	10-20% increase	

OFFROAD Model Update

Existing Categories:

- Recreational Vehicle
- Construction and Mining
- Industrial
- Small Off-Road Equipment
- Agricultural
- Commercial
- Logging
- Airport Ground Support
- Oil Drilling
- Military Tactical
- Dredging
- Other Portable
- Entertainment
- Railyard Operations
- Pleasure Craft
- Transport Refrigeration

Population and activity- Base year population, annual activity, average horsepower, useful life, load factor, growth factor

Emission Factors-evaporative, exhaust, temp/humidity, fuel correction, adopted standards

Reactive Organic Gas (ROG) Emissions Comparison to Almanac 2003

Category	2000			2020		
	Almanac 2003	2007 Planning Inventory	Delta	Almanac 2003	2007 Planning Inventory	Delta
Recreational Vehicles	52	57	4	63	91	28
Lawn and Garden	78	130	51	59	84	26
Construction and Mining	43	59	16	17	24	8
Industrial	17	22	5	5	7	2
Transport Refrigeration Units	6	13	8	2	4	2
Light Commercial	28	41	13	14	16	1
Airport Ground Support	1	3	1	0	1	1
Agricultural	27	35	8	9	10	1
Pleasure Craft	331	284	-47	198	182	-16

NOx Emissions

Comparison to Almanac 2003

	2000			2020		
Category	Almanac 2003	Draft	Delta	Almanac 2003	2007 Planning Inventory	Delta
Transport Refrigeration Units	26	21	-4	12	29	16
Pleasure Craft	37	36	0	48	64	16
Lawn and Garden	7	15	8	8	13	6
Industrial	68	94	26	23	28	5
Oil Drilling	12	26	14	5	7	2
Airport Ground Support	8	12	5	3	5	2
Light Commercial	43	68	25	28	29	1
Logging	11	11	0	4	2	-2
Construction and Mining	331	359	28	144	141	-3
Recreational Vehicles	4	2	-3	6	3	-3
Agricultural	178	174	-4	68	54	-14

OFFROAD Model Update

Add new categories:

- Cargo Handling Equipment
- Locomotives
- Gas Can
- Ocean-going Vessels
- Harbor Craft

AB 32 - Global Warming Solutions Act Approach

- Sets in statute Governor's 2020 target
- Climate Action Team continues to coordinate statewide climate policy
- ARB is charged with monitoring and regulating sources of emissions of greenhouse gases in order to reduce emissions

Governor's Executive Order

- Greenhouse gas reduction targets
 - By 2010, reduce to 2000 levels*
 - By 2020, reduce to 1990 levels**
 - By 2050, reduce to 80% below 1990 levels

* Equals about 60 million tons emission reduction or an 11% decrease

** Equals about 174 million tons emission reduction or 30% decrease

AB 32 Timeline

- 1/1/07: ARB maintains statewide inventory
- 6/30/07: List of discrete early actions
- 1/1/08: Mandatory reporting of emissions
Adopt 1990 baseline/2020 target
- 1/1/09: Scoping plan of reduction strategies
- 1/1/10: Regulations to implement discrete
early action items
- 1/1/11: Regulations to implement scoping
plan

Scoping Plan- January 1, 2009

- **Regulations to implement Scoping Plan**
 - Adopted no later than January 1, 2011
- **Describes How ARB's Regulatory Authority will be used:**
 - Direct emission reduction measures
 - Market-based compliance mechanisms
 - Alternative compliance mechanisms
 - Potential monetary and non-monetary incentives
- **Every Rule Must Be:**
 - Cost effective
 - Technologically feasible
 - Designed to avoid increases in other air pollutants
 - Compatible with electricity reliability
- **Plan to be updated every five years**

Other Provisions

- If motor vehicle GHG regulation found invalid, ARB must achieve equivalent or greater reductions through alternative regulations to control mobile sources
- No limitation or expansion of air district authority
- ARB authority to adopt fees

Implementation

- Open, transparent process
- Review of economic impacts and EJ concerns
- Intensive consultation
 - CalEPA
 - Climate Action Team
 - National and international experts
 - Stakeholders
- Advisory Committees
 - Environmental Justice
 - Economic and Technology Advancement
- Close coordination with other agencies

State Implementation Plan Milestones

Final emission targets	Fall-2006
State/federal control strategies	Winter-2006
Draft plans released	Winter-2006/07
Local & state plan adoption	Spring-2007
Ozone plans to U.S. EPA	June-2007
Reg'l Haze plans to U.S. EPA	Dec. 2007
PM2.5 plans to U.S. EPA	April 2008
Ozone attainment deadline	2007-2024
PM2.5 attainment deadline	2010-2015

Draft State/Federal Control Concepts

Passenger Vehicles

- **Smog Check Improvements**
 - Low Pressure Evaporative Test
 - More Stringent Cutpoints
 - Annual Inspections for Older Vehicles
 - Annual Inspections for High Annual Mileage Vehicles
 - Add Visible Smoke Test
 - Idle Testing in Enhanced Smog Check Areas.
 - Inspection of Light and Medium Duty Diesels
 - Inspection of Motorcycles
- **Expanded BAR Vehicle Retirement Plus Parts Replacement**
- **California Phase 3 Reformulated Gasoline Modifications**
- **Expanded Motorcycle Standards**

Draft State/Federal Control Concepts

- **Truck**

- Expanded Truck Fleet Modernization Program
- Additional Reductions from Out-of-State Trucks in California
- Diesel Truck Emissions Tracking and Inspection Program

- **Construction Equipment**

- Construction Equipment Fleet Averages/Fleet Modernization
- Construction Equipment Idling Limitations

- **Agricultural Equipment**

- Agricultural Equipment Fleet Modernization

- **Other Engine Exhaust and Evaporation**

- Accelerate Turnover of Pre-1999 Outboard/Personal Water Craft (PWC)
- Engines/Lower (Catalyst-Based) Exhaust Standards for Outboard/PWCs
- Airport Ground Service Equipment (GSE); Increase Percent EVs/Lower Fleet Averages
- Recreational Vehicle Evaporative Standards
- 2006 Large Spark Ignited Engine Regulation

Next Steps

Between now and January 2007

- Release EMFAC2007 and calculate emissions budgets
- Finalize PM2.5 modeling and weight of evidence analysis
- Finalize ozone modeling
- Finalize draft control strategies
- Peer review of modeling results
- Determine carrying capacities and attainment demonstration
- Black Box and Bump Up determinations

QUESTIONS

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